

N^o 6646



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PROVISIONAL SPECIFICATION.

Improvements relating to Obstetrical Forceps and other Surgical Instruments.

I, WALTER CUTTELL LONGMATE, of Denmark House, Wellington Road, South, Hounslow, in the County of Middlesex, Surgical Instrument Maker, do hereby declare the nature of this invention to be as follows:—

My invention relates to obstetrical forceps and other surgical instruments, and has for its object to provide improved means for securing the handles to such instruments.

It has heretofore been customary in the case of obstetrical and other surgical instruments to fix the handles thereto by brazing, which however does not make a durable joint, so that, after the instruments have been in use for some time, foreign matter is liable to penetrate through the defective joint into the cavity of the handle and give rise to very serious inconveniences.

In order to obviate these inconveniences I provide each branch of the forceps or other surgical instrument with a flattened part or plate, and secure at one end of the same a screw having a taper head similar to that of a counter-sunk screw and protruding from the plate. In lieu of such a screw I may employ any projection of dove-tail or other appropriate section, fixed to or forming one piece with the aforesaid plate.

In one end of the handle designed to be attached to the plate, which as usual is made hollow, I form a groove of dove-tail or other shape, corresponding in transverse section to the shape of the projection on the plate, so that when this projection is caused to engage with the aforesaid groove the end of the handle will be firmly held in position.

The other end of this handle may be secured to the corresponding part of the plate by a counter-sunk screw extending through the latter into a solid portion of the handle. I may also use a spring catch or the like for the same purpose.

It will be seen that this arrangement enables the handles to be easily detached from the instrument, so that all the parts may be thoroughly cleaned after an operation has been performed or when the instrument has become dirty.

Dated this 3rd day of April 1894.

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WALTER CUTTELL LONGMATE.

COMPLETE SPECIFICATION.

Improvements relating to Obstetrical Forceps and other Surgical Instruments.

I, WALTER CUTTELL LONGMATE of Denmark House, Wellington Road South, Hounslow, in the County of Middlesex, Surgical Instrument Maker, do hereby declare the nature of my invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

My invention relates to obstetrical forceps and other surgical instruments, and

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has for its object, to provide improved means for securing the handles to such instruments so that they may be easily and expeditiously removed and replaced as often as required.

It has heretofore been customary in the case of obstetrical forceps to attach the handles to their tangs or blades by brazing, or by the use of rivets or screws thus leaving generally an air hole and when exposed to the action of the air and impurities on a person's hands, which forms a recess for substances to lodge and produce verdigris, or cause spots on the handles of the instruments, by the various chemicals liable to come into contact with them, and as moreover the handles are attached in a permanent manner it is very difficult to cleanse them. 10

According to my invention I avoid these disadvantages by providing obstetrical forceps and other surgical instruments with handles which can be readily removed when desired from the tang or blade of the same and which can therefore be readily cleansed independently of the said tang or blade and then again replaced free from corrosion or impurities. 15

In order that my said invention may be clearly understood I will now proceed to describe the same with reference to the accompanying drawing.

Figs. 1 and 3 represent a side and front view respectively of one complete half of midwifery forceps provided with my improved removable handle.

Figs. 2 and 4 show the side and front view of a tang or blade of forceps to which my special handle is attached. 20

Fig. 5 is an end view of my improved handle showing a T-shaped recess for the tang or blade.

Fig. 6 is a front view showing a dove-tail or V-shaped recess for the stud.

Fig. 7 shows a section through handle at the hole for the reception of a spring bolt or catch. 25

Fig. 8 represents an improved removable handle with the spring bolt or catch removed.

Fig. 9 shows a nut for the end of the spring bolt or catch used as a knob for pressing with the finger or with a presser. 30

Fig. 10 is a plan of the spring bolt or catch.

Fig. 11 is an elevation of the same.

Fig. 12 shows a modification of my invention to be hereinafter described.

In the drawing A is the improved metallic handle and B the blade of the forceps. 35

The said handle A which may be of any suitable shape may be cast or otherwise constructed of aluminium, nickel, brass, steel or other metal. At its front end is cut a dove-tailed groove *h* as shewn in Figure 6 or the said groove may be made of any shape to suit the kind of stud used to prevent the handle moving sideways.

To keep the handle central I form at its rear end a T-shaped groove *i* as shown in Figure 5 wherein the tang or blade of the forceps is fitted to stop the handle from lifting vertically, while allowing it to move backwards or forwards at will. The rear end of the handle has a spring catch or bolt *b* provided in a specially shaped recess *e* Fig. 7; this catch or bolt is round and screw threaded at one end *l*. Figures 10 and 11, on which is screwed a round nut *c* Figure 9 having on its front face grooves or slits to engage with a screw driver or the like in order to adjust the pressure on the spring and also to form a stop or abutment for the latter. The other end of bolt has an oblong head *m* of the same thickness as the bolt and of such a depth as to allow the bottom edge to pass into the recess *i*. Part of the bottom edge is cut away as indicated at *k* to form an easy incline after closing the handle on the tang or blade and to form the catch for the bolt. On the round part of spring bolt between the oblong head *m* Fig. 1 is a spiral spring *d* which tends to always keep the said catch or bolt in its closed position. The blade of the forceps consists of steel and has a taper tang *n* at the handle end. To its front end is riveted a dove-tail headed bolt or stud *g* exactly fitted to pass into the recess *h* in the movable handle. The rear end of the tang is shouldered down at *o* Fig. 2 in order to stop the shoulder at *p* on the handle Figure 3, this end of the tang 50 55

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is **T**-shaped to fit exactly into the recess *i* Figure 5; in one side of the **T**-shaped part is provided a recess *a* with which the spring catch or bolt *b* engages and thereby locks the handle in position.

By passing the end of the handle with its recess *h* over the dovetail stud *g* at the same time sliding the recess *i* at the rear end over the **T**-shaped end of the tang *j* and pressing the handle *A* forward, the incline *k* on the spring bolt *b* engages with the **T**-shaped end of the tang at *j* and pressure causes the bolt *b* to slide or move outwards and draw nut *c* on the top of the spring *d* nearer to the centre of the handle, thus compressing the said spring. When the handle *A* is pressed to its correct position the recess *a* in the shoulder has passed the spring bolt catch *k* which by the tension of the spring *d* on the nut *c* draws the spring bolt back to its former position, but with the catch *k* engaging with the recess *a*, thus locking the handle *A* on the tang of the forceps.

To remove the handle for cleansing purposes the nut *c* is depressed thus forcing the catch *k* out of the recess *a* which allows handle *A* to be easily and rapidly removed.

I sometimes attach the handle *A* to the tang *n* by a simple screw *N*. Figure 12 employed in conjunction with the stud and slot hereinbefore described with reference to Figures 1 to 11.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is :—

1st. The application of removable handles to midwifery forceps and like obstetrical instruments, substantially and for the purposes herein described.

2nd. In midwifery forceps or like obstetrical instruments the employment of spring catches designed to form locks for securing the handles to such instruments substantially as set forth.

3rd. In midwifery forceps or like obstetrical instruments the employment of handles adapted to receive spring bolts or catches or fastenings designed for locking or securing the said handles so that the latter may be easily removed for cleansing purposes, substantially as set forth.

4th. In midwifery forceps or like obstetrical instruments the use of tangs presenting ends of **T**-shaped or other form in combination with dove-tailed or other shaped studs for attaching movable handles to the tangs, substantially as set forth.

5th. The various modifications of the method of attaching or fastening handles to midwifery forceps or like obstetrical instruments by means of screws, spring catches or bolts or springs which constitute catches, substantially as hereinbefore set forth with reference to the accompanying drawing.

Dated this 31st day of December 1894.

WALTER CUTTELL LONGMATE.



[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

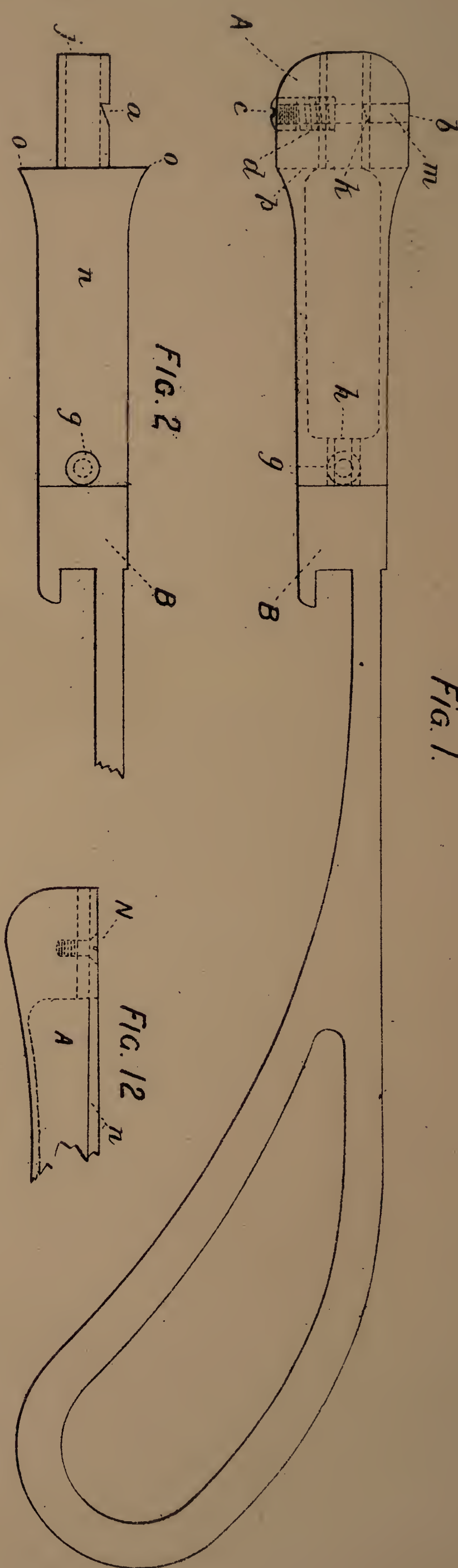


Fig. 2.

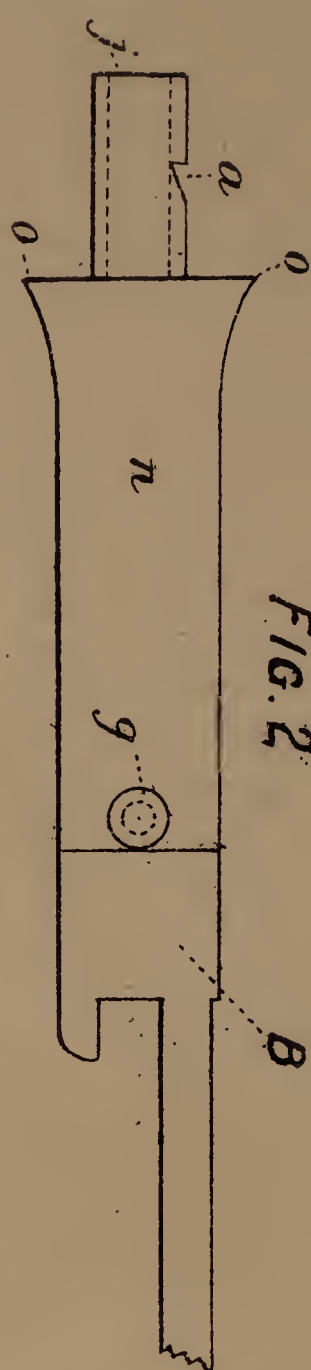


Fig. 12.

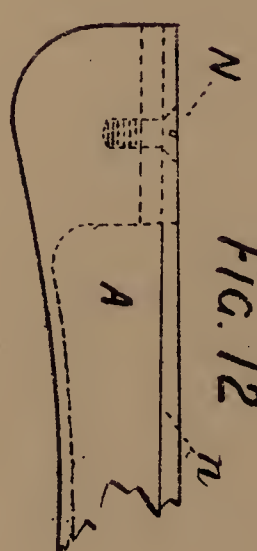


Fig. 3.



Fig. 5.



Fig. 6.



Fig. 7.

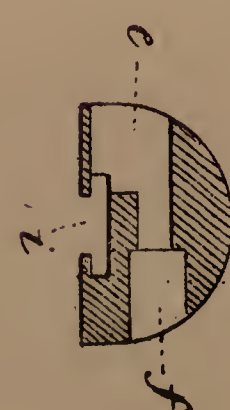


Fig. 4.

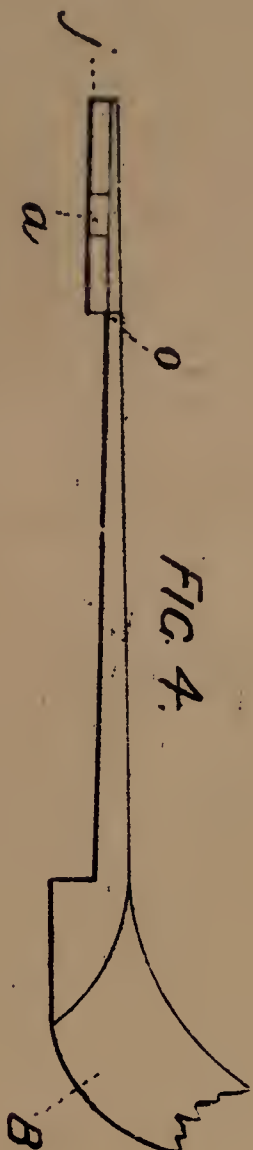


Fig. 9.



Fig. 10.

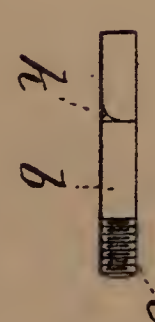


Fig. 11.

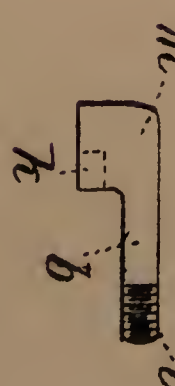


Fig. 8.

